

Project Fact Sheet

Xantrex Residential Electric Power Security Project

GOALS

The overall goal of this project has been to raise California's PV system production and installation capacity by reducing complexity and enhancing performance, thus increasing availability and consumer benefit. Under this program, Kyocera Solar, Inc. and Xantrex Technology Inc. designed, assembled, and tested a new photovoltaic (PV) power system for residential rooftops.

Technical Objectives

- Achieve a conversion efficiency for the power unit, operating at the higher voltage from
- the energy storage unit, of greater than 94 percent at 100 percent of rated output power.
- Achieve a total harmonic distortion below five percent.

Economic Objectives

- Reduce the material and direct labor cost of producing the Power Unit from \$0.67 to \$0.34 per Watt.
- Reduce the material and direct labor cost of installing the PV array from \$7.00 to as low as \$3.79 per square foot.

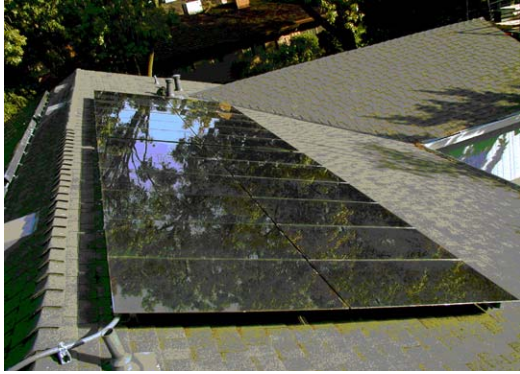


PROJECT DESCRIPTION

The cost of a photovoltaic generation system may be divided into two categories: PV module cost and balance-of-system (BOS) cost. This project addresses a way to reduce the BOS cost by:

- Standardizing the design
- Simplifying the design of the system and the power unit
- Improving the power conversion efficiency of the system
- Reducing on-site installation labor
- Increasing production volume

Xantrex Technology Inc. and Kyocera Solar, Inc. performed the work on this project to create a residential rooftop generation system requiring less engineering for site-specific applications and less time to install. The system also provides on-site energy storage for critical load operation during utility line service interruption while costing less than the equivalent custom PV systems that are commercially available.



BENEFITS TO CALIFORNIA

Xantrex Technology Inc. and Kyocera Solar, Inc. completed the design, fabrication, and testing on the first higher voltage, modular, maintenance free, battery-based, residential electric power security system for PV applications of grid support, off-grid support, and backup power.

Established economic goals were met:

- The material and direct labor cost of producing the Power Unit has been reduced from \$0.67 for similar models, to \$0.34 per Watt.
- The material and direct labor cost of installing the PV array has been reduced from \$7.00 to as low as \$3.79 per square foot.

This program has advanced California's PV system production and installation capacity and set the stage for future development of even more commercially available PV power systems:

- Over 80 residential rooftops have been equipped with the modular PV rooftop array designs and installation processes.
- A power unit with exceptionally high efficiency and low distortion was developed.
- A PV system with battery backup power during utility line outages was presented. This system will provide back-up power to the residential customer in times of utility grid interruption.

FUNDING AMOUNT

| | |
|------------|-----------|
| Commission | \$426,343 |
| Match | \$525,718 |
| Total | \$952,061 |

PROJECT STATUS

Project is completed.

FOR MORE INFORMATION

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